Applicants: Nicholas V. Nechitailo et al.

Attorney Docket No.: Navy Case 84629

Serial No.: 10/779,555

Filed: February 10, 2004

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Amendments to the Specification:

Please replace the paragraph at page 2, line 26 – page 3, line 6 with the following:

In accordance with the present invention, a reactive composite projectile includes a reactive composite material in a solid shape form and an encasement material applied to and surrounding the solid shape for exerting compressive forces thereon. Additionally or alternatively, an elongate structure can be positioned in the solid-shape form. The elongate structure is made from a material having a mass density that is approximately 2 to 10 times the mass density of the reactive composite material. In general, the encasement material enhances projectile performance in terms of launch/in-flight integrity and while the elongate structure enhances projectile performance in terms of penetration/energy release.

Please replace the paragraphs at page 3, line 28 – page 4, line 1 with the following:

FIG. 8 is a perspective view of a fifth embodiment of an elongate structure; and

FIG. 9 is a cross-sectional view of a reactive composite projectile that is encased in a compressive material and that incorporates an elongate structure therein in accordance with a third aspect of the present invention; and

FIGs. 10-12 are perspective views of solid forms for the reactive composite material.

Please replace the paragraph at page 5, line 8 – page 6, line 2 with the following:
Referring now to the drawings, and more particularly to FIG. 1, a reactive composite
projectile in accordance with a first aspect of the present invention is shown and is referenced
generally by numeral 10. Projectile 10 includes a reactive composite material 12 in the form of a
solid-shape form. As mentioned above, the particular constituent elements and shape of material 12
are not limitations of the present invention. Encasing material 12 is an encasing material 14 that
applies compressive forces (indicated by arrows 16) to material 12 on all sides thereof. Encasing
material 14 and the resulting compressive forces 16 enhance the launch and in-flight integrity of
projectile 10. Specifically, after projectile is launched or otherwise propelled through a medium
such as air, material 12 is subjected to wave loading that includes waves of tension that pass through
material 12. Without encasing material 14, these waves of tension would cause spalling and

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separation of material 12 at the edges of the shape thereof. However, the compressive state of material 12 brought about by encasing material 14 suppresses the waves of tension brought on by the launching of projectile 10. In addition, high-speed flight of an unencased material 12 can cause spalling and separation of material 12 at the outer edges thereof. However, encasing material 14 prevents such in-flight spalling and separation to insure the integrity of material 12 throughout its flight. Thus, encasing material 14 will improve the launch and in-flight integrity of reactive composite material 12.

Please replace the paragraph at page 7, lines 4-13 with the following:

The second aspect of the present invention enhances a reactive composite projectile's target penetration and energy release performance. Several exemplary embodiments of such reactive composite projectiles will be described herein with the aid of FIGs. 4-8 where, in each of the embodiments, reactive composite material 12 is in the form of a solid cylinder that is illustrated using phantom lines. As mentioned above, it is to be understood that the cylindrical shape of material 12 is not a limitation of the present invention. <u>FIGs. 10-12 illustrate various exemplary embodiments for the solid form, including but not limited to a cylinder, a sphere and a cube, respectively.</u>